



Technical Assistance *Revisited*

Berkshire Industries Solvent Substitution

The Technical Assistance Revisited case studies are the result of an effort to measure the effectiveness of the Commonwealth's program of helping companies to reduce toxics use through onsite visits.



Hand washing a part with
Brulin 815 GB

Company Quotes

"OTA has been invaluable to me. I call up and they put me in the right direction." -
James Johnstone,
Berkshire Industries



Washed Machine Part

The Massachusetts Office of Technical Assistance for Toxics Use Reduction (OTA) offers assistance in reducing the use of toxic materials, improving environmental performance and promoting economic growth.

Summary

Berkshire Industries eliminated their use of 30,000 pounds of 1,1,1-trichloroethane (TCA), an ozone-depleting chemical, by switching to an aqueous substitute – Brulin 815 GB. The reduced chemical use resulted in a savings of thousands of dollars per year in reduced purchasing costs. In addition to the reduced chemical use, this change led to numerous benefits for the company including a savings of more than \$25,000 per year in material, compliance, and operating costs, and additional workspace from the removal of hazardous waste storage tanks. The environmentally preferable cleaner worked well enough to help Berkshire retain their primary customer, representing \$4 million in revenue per year.

Background

Berkshire Industries, a 170-person firm located in Westfield, Massachusetts, is a maker of precision aircraft parts. TCA was an extremely effective cleaner—it was used as a final clean throughout the plant and removed all the processing residues. The company decided to eliminate the use of TCA when it was identified as an ozone-depleting substance. Of the alternative cleaners Berkshire tried, some did not clean well enough, and others caused corrosion, pitting, or color changes in the parts.

Toxics Use Reduction

Needing a substitute for TCA to both ease their regulatory burdens and to meet customer demand, the company contacted the Office of Technical Assistance (OTA). After visiting the facility, OTA provided information on several different aqueous cleaners and arranged for the company to evaluate alternative cleaners at the Massachusetts Toxics Use Reduction Institute's (TURI) Surface Cleaning Lab. After several trials, the company found that an aqueous substitute, Brulin 815 GB, cleaned to a high standard without damaging the parts. As a result, Berkshire was able to completely eliminating their TCA use.

Based on an OTA recommendation, Berkshire Industries switched from oil to electricity to heat their water. The change reduced oil consumption by 4,000 gallons, saving the company \$4,500.00 in fuel costs. The switch to electricity meant the company no longer had to file for polycyclic aromatic compounds, saving \$5,800 in reduced TURA fees. The company also experienced water conservation benefits.



Results

Reductions

The elimination of TCA and mineral spirits enabled Berkshire to:

- Reduce purchasing costs by hundreds of thousands of dollars annually
- Avoid the costs of reporting the chemical, fees for its use, and the need to develop plans to reduce its use, otherwise required by the Massachusetts Toxics Use Reduction Act
- Avoid the costs of complying with Clean Air Act requirements
- Reduce generation of 800 pounds of hazardous waste, which eliminated the need for a hazardous waste recycling permit
- Remove three 500-gallon hazardous waste storage tanks and expand working space
- Eliminate twenty annual tank truck visits (and related risks)
- Reduce workplace exposures and environmental pollution
- Reduce training hours

Economics

The reduced compliance burden produced an annual savings of about \$20,000 for Berkshire Industries. (This estimate does not include potential reductions in insurance and workers' compensation costs stemming from lowered exposure risks and incidents). The company also saved \$4,500 per year in utility costs. In addition, using Brulin is far cheaper than TCA, saving the company thousands of dollars per year. However, the greatest financial benefit was that because Brulin cleaned well enough for Berkshire to retain its largest customer, the benefit of finding an effective substitute cleaner was approximately \$4 million in annual revenues. The switch also led to increased efficiencies and enabled the company to expand operations.

Technical Assistance Impact

Berkshire Industries credits OTA and TURI with helping them modernize and remain competitive. After working with OTA, the company does a better job of tracking its materials use, releases, and waste. A result of the efforts to find a better parts cleaner is that employees are more open to the idea of researching alternatives to any hazardous chemicals they might consider using. They also have much better relations with DEP.

The Office of Technical Assistance and Technology (OTA) is an onsite assistance service that is available to toxics users in Massachusetts. OTA staff are trained specialists in toxics use reduction and environmental compliance. They have many years of experience in working with all forms of industrial production, as well as other facilities where toxics are used. For more information about OTA please visit www.mass.gov/envir/ota or call 617-626-1060.